Docket No. 2098-117 **PATENT**

CERTIFICATE OF EFS ELECTRONIC TRANSMISSION
I hereby certify that this paper is being transmitted to the United States Patent Office by the USPTO EFS web electronic filing system on October 2, 2007.
/Holly D. Kozlowski/
Holly D. Kozlowski

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Appellant:	Gregory K. Jones	:	Confirmation No.: 3508
Serial No.:	10/622,790	:	Group Art Unit: 1771
Filing Date:	July 18, 2003	:	Examiner: Ula C. Ruddock

For: **Breathable Materials Comprising Low-Elongation Fabrics, and Methods**

APPEAL BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The present Appeal Brief is submitted in support of the Notice of Appeal filed on May 2, 2007.

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is the Assignee of the present application, Clopay Plastic Products Company, Inc.

II. RELATED APPEALS AND INTERFERENCES

There are no other prior or pending appeals, interferences, or judicial proceedings known to the Appellant, the Appellant's undersigned legal representative, or the Assignee

which may be related to, directly affect or be directly affected by or having a bearing on the Board's decision in the present appeal.

III. STATUS OF THE CLAIMS

Claims 1-29 are pending. Claims 19-25, 28 and 29 are withdrawn as relating to a non-elected invention. Claims 1-18, 26 and 27 are rejected and the subject of the present Appeal. A complete copy of claims 1-18, 26 and 27 is set forth in the Claims Appendix.

IV. STATUS OF AMENDMENTS

No amendment was filed subsequent to the Official Action dated November 2, 2006, setting forth the rejection on appeal.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

As defined by claim 1, the invention is directed to a breathable material comprising a low-elongation fabric layer exhibiting less than about 30% elongation as measured according to ASTM D5034 in at least one direction, and a microporous coating thereon, the microporous coating comprising a crystalline polymer composition and a filler (specification, page 2, lines 23-25 and page 4, lines 2-4).

Claims 2-14, 26 and 27 further define the breathable material of claim 1. According to claim 2, the low-elongation fabric layer in the breathable material of claim 1 comprises a low-elongation nonwoven layer (specification, page 4, line 11). According to claim 3, the low-elongation nonwoven layer in the breathable material of claim 2 comprises polyolefin cross-laminated open mesh (specification, page 4, lines 16-17). According to claim 4, the low-elongation nonwoven layer in the breathable material of claim 3 comprises polyethylene cross-laminated open mesh having a basis weight of greater than about 0.7 oz/yd^2

(specification, page 4, lines 17-24). According to claim 5, the low-elongation nonwoven layer in the breathable material of claim 2 comprises spunbonded polypropylene, and according to claims 6 and 7, respectively, the spunbonded polypropylene in the breathable material of claim 5 has a basis weight of greater than about 0.7 oz/yd^2 and equal to or greater than about 1 oz/yd^2 (specification, page 5, lines 1-6).

According to claim 8, the crystalline polymer composition in the breathable material of claim 1 comprises at least 50 weight percent of high density polyethylene (specification, page 6, lines 1-9). According to claim 9, the filler in the breathable material of claim 1 comprises calcium carbonate (specification, page 6, lines 15-16).

According to claim 10, the microporous coating in the breathable material of claim 1 comprises a single layer, while according to claim 11, the microporous coating in the breathable material of claim 1 comprises two or more layers (specification, page 7, lines 5-10).

According to claim 12, the breathable material of claim 1 further comprises a second fabric layer, wherein the coating is arranged between the low-elongation fabric layer and the second fabric layer (specification, page 7, lines 19-21).

Claim 13 recites that the breathable material of claim 1 has a water vapor transmission rate of greater than about 150 g/m^2*24 hr, while claim 14 recites that the breathable material of claim 13 has a water vapor transmission rate of less than about 2000 g/m^2*24 hr (specification, page 8, lines 4-10).

According to claim 26, the low-elongation fabric layer in the breathable material of claim 1 comprises a low-elongation woven layer (specification, page 4, line 11). According to claim 27, the low-elongation woven layer in the breathable material of claim 26 is formed of polyethylene, polypropylene, or a combination thereof (specification, page 4, lines 13-16).

Independent claim 15 recites a breathable housewrap material comprising a low-elongation fabric layer exhibiting less than about 30% elongation as measured according to ASTM D5034 in at least one direction, and a microporous coating comprising high density polyethylene and a filler thereon (specification, page 3, lines 1-4 and page 4, lines 2-4).

Claims 16-18 further define the breathable material of clam 15. According to claim 16, the low-elongation fabric layer in the breathable material of claim 15 comprises a polyolefin nonwoven layer (specification, page 4, lines 13-16). According to claim 17, the low-elongation polyolefin nonwoven layer in the breathable material of claim 16 comprises polyethylene cross-laminated open mesh having a basis weight of greater than about 0.7 oz/yd^2 (specification, page 4, lines 16-24). According to claim 18, the low-elongation polyolefin nonwoven layer in the breathable material of claim 16 comprises spunbonded polypropylene having a basis weight of greater than about 0.7 oz/yd^2 (specification, page 5, lines 1-4).

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The single ground of rejection to be reviewed on appeal is the rejection of claims 1-18, 26 and 27 under 35 U.S.C. §103(a) as being obvious and unpatentable over the Gardner et al U.S. Patent Publication No. 2002/0071944 in view of the Carroll et al U.S. Patent Publication No. 2004/0023585 or the Sheth U.S. Patent No. 4,929,303.

VII. ARGUMENTS

As will be set forth in detail below, the breathable materials defined by claims 1-18, 26 and 27 are nonobvious over and patentably distinguishable from the combination of Gardner et al in view of Carroll et al or Sheth. Accordingly, the rejection of these claims

under 35 U.S.C. §103(a) should be reversed, and favorable action by the Board is respectfully requested.

A. The Examiner's Position

In rejecting claims 1-18, 26 and 27 under 35 U.S.C. §103(a), the Examiner asserted that Gardner et al disclose a breathable composite material useful as housewrap, wherein the film and nonwoven fabric layers comprise polyolefin resin compositions such as high density polyethylene (HDPE) and polypropylene. The Examiner referred to paragraph [0025] as disclosing a laminate having an inner breathable film layer laminated to outer surface layers of continuous filament nonwoven web such a polypropylene spunbonded web and referred to Example 7 as disclosing a composite having moisture vapor transmission rates in the range claimed by Appellant. The Examiner asserted that Gardner et al disclosed the claimed invention except for the teaching that the nonwoven fabric is a polyethylene cross-laminated open mesh having a basis weight of greater than about 0.7 oz/yd^2 and that the fabric layer exhibits less than about 30% elongation as measured according to ASTS D5034 in at least one direction.

The Examiner relied on Carroll et al as disclosing a composite used in housewrap and comprising a nonwoven fabric layer that has a suitably open mesh and comprises polyethylene and on Sheth as disclosing composite breathable housewrap films comprising a breathable polyolefin film heat laminated to a nonwoven HDPE fabric having an elongation of less than about 30%. The Examiner concluded it would have been obvious to have used Sheth or Carroll et al's polyethylene nonwoven open mesh as the fabric layer in Gardner et al's composite, motivated by the desire to create a housewrap with exceptional strength and durability. The Examiner also asserted that it would have been obvious to have used Carroll et al's woven fabric as the fabric layer of Gardner et al, motivated by the desire to create a laminate having increased dimensional stability and that it would have been obvious to have

made the fabric of Gardner et al having an elongation of less than 30% as disclosed by Sheth, motivated by the desire to create a laminate having excellent strength properties.

B. Claims 1-14, 26 and 27 are Nonobvious

As defined by claim 1, the present invention is directed to breathable material comprising a low-elongation fabric layer exhibiting less than about 30% elongation as measured according to ASTM D5034 in at least one direction, and a microporous coating thereon. The microporous coating comprises a crystalline polymer composition and a filler. As set forth at page 6 of the specification, crystalline polymer composition is defined as a polymer composition having greater than 50% of the polymer components in crystalline form.

Conventional composite materials containing low elongation fabrics exhibiting less than about 30% elongation are typically formed with low density polyethylene films in successive steps. For example, Sheth, which discloses a housewrap material including a low elongation fabric material, laminates the low elongation fabric material to a previously formed low density polyethylene breathable film, rendered breathable by stretching prior to lamination with the low elongation fabric. As noted in the present specification, the Sheth material is therefore somewhat cumbersome and expensive to manufacture in view of the successive processing steps which are required.

However, the present inventor has recognized that a coating of a crystalline polymer composition, such as, for example, high density polyethylene, in combination with filler, will be rendered microporous by a relatively small degree of stretching which is tolerated by the low elongation fabric layer. As explained in the present specification, for example beginning at page 11, line 19, the small degree of stretching which may be employed to render the coating microporous allows the use of smaller engagement depths in incremental stretching and therefore advantageously reduces or avoids damage to the materials during manufacture.

The presently claimed breathable materials may therefore be easily and efficiently manufactured as compared with the laminate materials of the prior art, for example as exemplified by Sheth.

Gardner et al disclose a breathable composite material comprising a laminate of a nonwoven web layer and a breathable film layer. The breathability of the composite is provided by a plurality of point-like deformations of the film layer. As explained in paragraph [0015], the plurality of point-like deformations are a number of small depressions or compressed areas that penetrate into the depths of the film layer but do not perforate or form holes in the layer, and the term "point-like" is used to indicate that the deformations are essentially discrete from one another or disposed essentially continuously over a surface of the layer. Gardner et al disclose that a molten film-forming resin composition is applied to a nonwoven web, the molten composition is cooled, and the coated web is subjected to heat and pressure at a plurality of points on a surface thereof, wherein the heat, pressure and density and proportion of the composite surface occupied by the deformations are effective to impart breathability without loss of liquid barrier properties (Abstract).

Additionally, while stretching can be conducted to increase breathability, preferred composites are those in which breathability is provided by the plurality of deformations without, or with only insignificant, lengthwise or widthwise stretching (paragraph [0017]). Gardner et al disclose that in a preferred embodiment, heat and pressure are applied at a plurality of points on the surface of the coated web by passing the web through an embossing roll system in which at least one roll has been engraved or otherwise machined or treated to impart a plurality of raised point or areas to the surface thereof (paragraph [0042]).

One of ordinary skill in the art will readily appreciate that the nonwoven web layer of Gardner et al is not a low elongation fabric as required by the present claims. That is, in order to effectively form the raised points or areas, one of ordinary skill in the art would

appreciate that the nonwoven fabric of Gardner et al would be readily compressible and flexible. In this regard, attention is directed to the exemplary nonwoven materials employed by Gardner et al which are disclosed as having high elongation properties. Specifically, nonwoven Fabrics A-E of Gardner et al are disclosed as having machine direction elongations of 97%, 118%, 118%, 62% and 44%, respectively, and cross direction elongations of 188%, 252%, 252%, 166% and 78%, respectively, all of which elongations are significantly greater than the less than about 30% elongation in at least one direction required for the low elongation fabric required by the present claims. While the teachings of Gardner et al are not limited to the exemplary materials, Gardner et al provide no teaching or suggestion for use of a low elongation material, i.e., having an elongation of less than about 30% in at least one direction, as presently claimed.

Additionally, and importantly, Gardner et al broadly disclose a number of polyolefin resins for use in the film layer in paragraphs [0020], [0023] and [0033], but only exemplify a resin mixture comprising 70 parts by weight polyethylene concentrate (containing 31.7 weight % LLDPE (linear low density polyethylene)), 10 parts by weight LLDPE and 25 parts by weight ULDPE (ultra low density polyethylene) (Example 1). One skilled in the art will recognize that low density polyethylene (LDPE) such as LLDPE and ULDPE often have low crystallinity while the coating recited in claim 1 comprises a crystalline polymer composition. For example, HDPE, a preferred material for the present microporous coating, typically has high crystallinity. Again, while the teachings of Gardner et al are not limited to the exemplary materials, Gardner et al provide no motivation for one of ordinary skill in the art to select a crystalline polymer composition as required by claim 1.

Neither Carroll et al nor Sheth resolve the deficiencies of Gardner et al with respect to claim 1. That is, Carroll et al disclose a conventional nonwoven - polyolefin film laminate which is rendered breathable by incremental stretching (see Fig. 2). Appellant finds no

teaching or suggestion by Carroll et al that the nonwoven is a low elongation fabric or that the polyolefin film comprises a crystalline polymer composition as presently claimed. To the contrary, Carroll et al, like Gardner et al, exemplify low density polyethylene film (paragraph [0073]). While Carroll et al disclose that their composite laminate may be further bonded to a scrim material (paragraphs [0064]-[0066]), Carroll et al still fail to disclose the combination of a low elongation fabric with a coating formed of a crystalline polymer composition as claimed.

Moreover, Appellant finds no teaching or suggestion by Carroll et al or Gardner et al for combining their teachings along the lines of the invention, or relating to any improvement provided by such a combination. While the Examiner has asserted that it would have been obvious to use Carroll et al's polyethylene nonwoven open mesh as the fabric layer in Gardner et al's composite, motivated by the desire to create a housewrap with exceptional strength and durability, neither the teachings of Carroll et al nor the teachings of Gardner et al support replacing the fabric layer of Gardner et al with an open mesh. That is, since Carroll et al disclose a conventional nonwoven polyolefin film laminate, which may be further bonded to a scrim material, the combination of Gardner et al and Carroll et al, at most, would suggest to one of ordinary skill in the art to add a scrim material to the breathable composite of Gardner et al. However, such a combination does not result in a breathable material as recited in claim 1 comprising a low elongation fabric layer with a microporous coating thereon, particularly wherein the microporous coating comprises a crystalline polymer composition and a filler. Thus, the combination of Gardner et al and Carroll et al does not render the breathable material of claim 1 obvious.

As discussed above, Sheth discloses a composite breathable film comprising a breathable polyolefin film heat laminated to a nonwoven open mesh fabric of high density polyethylene (HDPE) fibers. However, Appellant finds no teaching or suggestion by Sheth

for providing a low elongation fabric with a coating of a crystalline polymer composition, as presently claimed. To the contrary, Sheth prefers the use of a linear low density polyethylene polymer to form a film layer (column 3, lines 1-26), which is first stretched and then bonded to the fabric layer. Thus, Sheth also fails to resolve the deficiencies of Gardner et al.

Moreover, Appellant finds no teaching or suggestion by Sheth or Gardner et al for combining their teachings along the lines of the invention, or relating to any improvement provided by such a combination. The Examiner asserted that it would have been obvious to use Sheth's nonwoven open mesh as the fabric layer in Gardner et al's composite motivated by the desire to create a housewrap with exceptional strength and durability. However, Gardner et al teach in paragraph [0032] that heavier fabrics of higher basis weight or coarser filaments provide increased strength and durability. Thus, one of ordinary skill in the art would not be motivated to employ a thin open mesh fabric as taught by Sheth in the composite of Gardner et al, but rather the fabrics disclosed by Gardner et al with heavier basis weight or coarser filaments. The combination of Gardner et al and Sheth does not therefore render the breathable material of claim 1 obvious.

Moreover, none of Gardner et al, Carroll et al and Sheth teach or suggest the particular combination of a low elongation fabric layer with a microporous coating comprising a crystalline polymer composition and a filler. While Gardner et al broadly references high density polyethylene as one of various resin components, none of these references provide any motivation for one of ordinary skill in the art to combine a microporous coating comprising a crystalline polymer composition and a filler with a low elongation fabric layer. Importantly, none of the Gardner et al, Carroll et al and Sheth provides any suggestion or recognition of any desirable feature which would result from such a combination. On the other hand, Appellant has discovered that such a combination advantageously renders a breathable material by a minor degree of stretching which is

tolerated by the low elongation material, allowing the use of smaller engagement depths during incremental stretching and therefore avoiding or reducing material damage. None of the cited references, alone or viewed together, suggest such a combination or the advantages thereof.

As recently recognized by the Supreme Court, a claim to several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art, *KSR International Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 82 U.S.P.Q. 2d 1385 (2007). Further, the Court that the fact that elements work together in an unexpected and fruitful manner supports the conclusion that a combination is not obvious to those skilled in the art. The breathable material of claim 1 requires the combination of a low elongation fabric layer and a coating comprising a crystalline polymer composition and a filler which work together in an unexpected and fruitful manner to provide a breathable material when subjected to a relatively small degree of stretching which is tolerated by the low elongation fabric layer. Thus, the breathable materials of claim 1, and claims 2-14, 26 and 27 dependent thereon, are nonobvious over and patentably distinguishable from the combination of Gardner et al in view of Carroll et al or Sheth. Accordingly, the rejection of these claims under 35 U.S.C. §103(a) should be reversed.

C. Claim 4 is Further Patentably Distinguishable

Claim 4 is further patentably distinguishable from the combination of Gardner et al in view of Carroll et al or Sheth. That is, claim 4 recites a breathable material as defined in claim 1, wherein the low elongation fabric layer comprises a polyethylene cross-laminated open mesh nonwoven layer having a basis weight of greater than about 0.7 oz/yd^2. While both Carroll et al and Sheth disclose open mesh fabrics, neither of these references teaches or suggests that an open mesh fabric could be substituted for the nonwoven fabrics employed by Gardner et al. To the contrary, one of ordinary skill in the art would question the ability to

form the point like deformations of Gardner et al if the nonwoven fabrics of Gardner et al were replaced with an open mesh nonwoven layer as required by claim 4.

While the Examiner has asserted it would have been obvious to use nonwoven open mesh as the fabric layer in Gardner et al's composite, motivated by the desire to create a housewrap with exceptional strength and durability, Gardner et al merely teach that heavier fabrics or those with coarser filaments are desirable for applications having more demanding requirements in terms of strength and durability, such as roofing underlayments (Paragraph [0032]). Accordingly, the substitution asserted by the Examiner to arrive at a breathable material as required by claim 4 is contrary to the teachings of Gardner et al relating to applications requiring greater strength such as roofing applications.

Thus, the breathable material defined by Claim 4 is nonobvious over and further patentably distinguishable from the combination of Gardner et al in view of Carroll et al or Sheth, whereby the rejection of claim 4 under 35 U.S.C. §103(a) should be reversed.

D. <u>Claim 8 is Further Patentably Distinguishable</u>.

Claim 8 is further patentably distinguishable from the combination of Gardner et al in view of Carroll et al or Sheth. Claim 8 recites the breathable material of claim 1, wherein the crystalline polymer composition comprises at least 50 weight percent of high density polyethylene (HDPE).

Gardner et al broadly disclose that various resins may be used for the coating composition, including, *inter alia*, HDPE. However, Appellant finds no teaching by Gardner et al that the coating composition should comprise a crystalline polymer composition, and particularly a crystalline polymer composition comprising at least 50 weight percent of high density polyethylene as required by claim 8.

Attention is directed to Example 1 beginning at page 12 of the present application wherein a coating comprising high density polyethylene is extrusion laminated at one surface

to a nonwoven layer comprising polyethylene cross-laminated open mesh exhibiting an elongation of about 20% both in the machine direction and in the cross direction is produced. The coated material is subjected to cross-direction (CD) intermesh stretching using an engagement depth of about 15 mils and machine direction (MD) intermesh stretching using an engagement depth of about 30 mils to render the coating layer microporous and to provide a breathable material. For comparison purposes, a similar material is prepared except that the high density polyethylene extrusion coating is substituted with a linear low density polyethylene extrusion coating, generally comparable to that employed by Gardner et al, Carroll et al and Sheth. CD intermesh stretching is conducted with an engagement depth of 20 mil and MD intermesh stretching is conducted with an engagement depth of 30 mil. Surprisingly, the HDPE coating-containing breathable material exhibits equivalent or better breathability at lower elongation (as evidenced by the smaller CD engagement depth), as compared with that of the LDPE coating-containing material. As set forth in the present application, it is surprising and unexpected that the breathable material of the invention exhibits good microporosity at lower elongation. As a result of the lower elongation, fabric damage often incurred during regular stretching operations can be reduced and/or substantially avoided.

Not only do Gardner et al, Carroll et al and Sheth fail to teach or suggest the breathable material as recited in claim 8, wherein the crystalline polymer composition comprises at least 50 weight % of HDPE, none of the cited references teach or suggest the surprisingly good breathability exhibited by such a material, even when produced using a smaller intermesh engagement depth. Accordingly, the breathable material of claim 8 is nonobvious over and further patentably distinguishable from the cited combination of references, whereby the rejection under 35 U.S.C. §103(a) should be reversed.

E. Claims 15-18 are Nonobvious

As defined by claim 15, the present invention is directed to breathable housewrap material comprising a low-elongation fabric layer exhibiting less than about 30% elongation as measured according to ASTM D5034 in at least one direction, and a microporous coating thereon. The microporous coating comprises high density polyethylene and a filler. As discussed in detail above, the present inventor has recognized that a coating of high density polyethylene, in combination with the filler, will be rendered microporous by a relatively small degree of stretching which is tolerated by the low elongation fabric layer.

As also discussed in detail above, Gardner et al fail to teach or suggest a breathable material, particularly a housewrap material, comprising a low elongation fabric as required by the present claims. Further, and importantly, Gardner et al broadly disclose a number of polyolefin resins for use in the film layer in paragraphs [0020], [0023] and [0033], but only exemplify a resin mixture comprising 70 parts by weight polyethylene concentrate (containing 31.7 weight % LLDPE (linear low density polyethylene)), 10 parts by weight LLDPE and 25 parts by weight ULDPE (ultra low density polyethylene) (Example 1). One skilled in the art will recognize that low density polyethylene (LDPE) such as LLDPE and ULDPE often have low crystallinity while the coating recited in claim 15 comprises HDPE, which typically has high crystallinity. Again, while the teachings of Gardner et al are not limited to the exemplary materials, Gardner et al provide no motivation for one of ordinary skill in the art to select a highly crystalline polymer composition such as HDPE as required by claim 15.

Neither Carroll et al nor Sheth resolve the deficiencies of Gardner et al with respect to claim 15. Carroll et al disclose a conventional nonwoven - polyolefin film laminate which is rendered breathable by incremental stretching (see Fig. 2). Appellant finds no teaching or suggestion by Carroll et al that the nonwoven is a low elongation fabric or that the polyolefin film comprises a HDPE as presently claimed. To the contrary, Carroll et al, like Gardner et

al, exemplify low density polyethylene film (paragraph [0073]). While Carroll et al disclose that their composite laminate may be further bonded to a scrim material (paragraphs [0064]-[0066]), Carroll et al still fail to disclose the combination of a low elongation fabric with a coating formed of HDPE as claimed.

Moreover, Appellant finds no teaching or suggestion by Carroll et al or Gardner et al for combining their teachings along the lines of the invention, or relating to any improvement provided by such a combination. As discussed above, neither the teachings of Carroll et al nor the teachings of Gardner et al support replacing the fabric layer of Gardner et al with an open mesh. That is, since Carroll et al disclose a conventional nonwoven polyolefin film laminate, which may be further bonded to a scrim material, the combination of Gardner et al and Carroll et al, at most, would suggest to one of ordinary skill in the art to add a scrim material to the breathable composite of Gardner et al. However, such a combination does not result in a breathable material as recited in claim 15 comprising a low elongation fabric layer with a microporous coating thereon, particularly wherein the microporous coating comprises HDPE and a filler. Thus, the combination of Gardner et al and Carroll et al does not render the breathable material of claim 15 obvious.

As discussed above, Sheth discloses a composite breathable film comprising a breathable polyolefin film heat laminated to a nonwoven open mesh fabric of high density polyethylene (HDPE) fibers. However, Appellant finds no teaching or suggestion by Sheth for providing a low elongation fabric with a coating of a HDPE polymer composition, as presently claimed. To the contrary, Sheth prefers the use of a linear low density polyethylene polymer to form a film layer (column 3, lines 1-26), which is first stretched and then bonded to the fabric layer. Thus, Sheth also fails to resolve the deficiencies of Gardner et al.

Moreover, Appellant finds no teaching or suggestion by Sheth or Gardner et al for combining their teachings along the lines of the invention, or relating to any improvement

provided by such a combination. The Examiner asserted that it would have been obvious to use Sheth's nonwoven open mesh as the fabric layer in Gardner et al's composite motivated by the desire to create a housewrap with exceptional strength and durability. However, Gardner et al teach in paragraph [0032] that heavier fabrics of higher basis weight or coarser filaments provide increased strength and durability. Thus, one of ordinary skill in the art would not be motivated to employ a thin open mesh fabric as taught by Sheth in the composite of Gardner et al, but rather the fabrics disclosed by Gardner et al with heavier basis weight or coarser filaments. The combination of Gardner et al and Sheth does not therefore render the breathable material of claim 15 obvious.

Moreover, none of Gardner et al, Carroll et al and Sheth teach or suggest the particular combination of a low elongation fabric layer with a microporous coating comprising HDPE and a filler. While Gardner et al broadly references high density polyethylene as one of various resin components, none of these references provide any motivation for one of ordinary skill in the art to combine a microporous coating comprising a HDPE and a filler with a low elongation fabric layer. Importantly, none of the Gardner et al, Carroll et al and Sheth provides any suggestion or recognition of any desirable feature which would result from such a combination. On the other hand, Appellant has discovered that such a combination advantageously renders a breathable material by a minor degree of stretching which is tolerated by the low elongation material, allowing the use of smaller engagement depths during incremental stretching and therefore avoiding or reducing material damage. As demonstrated in Example 1 in the present application, this is a surprising advantage over materials prepared using a low density polyethylene as exemplified by all of Gardner et al, Carroll et al and Sheth. None of the cited references, alone or viewed together, suggest such a combination or the advantages thereof.

The breathable material of claim 15 requires the combination of a low elongation fabric layer and a coating of HDPE and a filler which work together in an unexpected and fruitful manner to provide a breathable material when subjected to a relatively small degree of stretching which is tolerated by the low elongation fabric layer. Thus, the breathable materials of claim 15, and claims 16-18 dependent thereon, are nonobvious over and patentably distinguishable from the combination of Gardner et al in view of Carroll et al or Sheth. Accordingly, the rejection of these claims under 35 U.S.C. §103(a) should be reversed.

F. Claim 17 is Further Patentably Distinguishable

Claim 17 is further patentably distinguishable from the combination of Gardner et al in view of Carroll et al or Sheth. That is, claim 17 recites a breathable material as defined in claim 15, wherein the low elongation fabric layer comprises a polyethylene cross-laminated open mesh nonwoven layer having a basis weight of greater than about 0.7 oz/yd^2. While both Carroll et al and Sheth disclose open mesh fabrics, neither of these references teaches or suggests that an open mesh fabric could be substituted for the nonwoven fabrics employed by Gardner et al. To the contrary, one of ordinary skill in the art would question the ability to form the point like deformations of Gardner et al if the nonwoven fabrics of Gardner et al were replaced with an open mesh nonwoven layer as required by claim 17.

While the Examiner has asserted it would have been obvious to use nonwoven open mesh as the fabric layer in Gardner et al's composite, motivated by the desire to create a housewrap with exceptional strength and durability, Gardner et al merely teach that heavier fabrics or those with coarser filaments are desirable for applications having more demanding requirements in terms of strength and durability, such as roofing underlayments (Paragraph [0032]). Accordingly, the substitution asserted by the Examiner to arrive at a breathable

material as required by claim 17 is contrary to the teachings of Gardner et al relating to applications requiring greater strength such as roofing applications.

Thus, the breathable material defined by Claim 17 is nonobvious over and further patentably distinguishable from the combination of Gardner et al in view of Carroll et al or Sheth, whereby the rejection of claim 17 under 35 U.S.C. §103(a) should be reversed.

IV. CONCLUSIONS

The breathable materials defined by claims 1-18, 26 and 27 are nonobvious over and patentably distinguishable from the combination of Gardner et al in view of Carroll et al or Sheth. Accordingly, the rejection of these claims under 35 U.S.C. §103(a) should be reversed. Favorable action by the Board is respectfully requested.

Please charge the Appeal Brief fee of $510.00 to our Visa credit card. Any deficiency or overpayment should be charged or credited to Deposit Account No. 04-1133.

Respectfully submitted,

/Holly D. Kozlowski/

Holly D. Kozlowski
Registration No. 30,468
Dinsmore & Shohl LLP
1900 Chemed Center
255 East Fifth Street
Cincinnati, Ohio 45202
513-977-8568

CLAIMS APPENDIX

1. A breathable material, comprising a low-elongation fabric layer exhibiting less than about 30% elongation as measured according to ASTM D5034 in at least one direction, and a microporous coating thereon, the microporous coating comprising a crystalline polymer composition and a filler.

2. A breathable material according to claim 1, wherein the low-elongation fabric layer comprises a low-elongation nonwoven layer.

3. A breathable material according to claim 2, wherein the low-elongation nonwoven layer comprises polyolefin cross-laminated open mesh.

4. A breathable material according to claim 3, wherein the low-elongation nonwoven layer comprises polyethylene cross-laminated open mesh having a basis weight of greater than about 0.7 oz/yd^2.

5. A breathable material according to claim 2, wherein the low-elongation nonwoven layer comprises spunbonded polypropylene.

6. A breathable material according to claim 5, wherein the spunbonded polypropylene has a basis weight of greater than about 0.7 oz/yd^2.

7. A breathable material according to claim 5, wherein the spunbonded polypropylene has a basis weight equal to or greater than about 1 oz/yd^2.

8. A breathable material according to claim 1, wherein the crystalline polymer composition comprises at least 50 weight percent of high density polyethylene.

9. A breathable material according to claim 1, wherein the filler comprises calcium carbonate.

10. A breathable material according to Claim 1, wherein the microporous coating comprises a single layer.

11. A breathable material according to Claim 1, wherein the microporous coating comprises two or more layers.

12. A breathable material according to claim 1, further comprising a second fabric layer, wherein the coating is arranged between the low-elongation fabric layer and the second fabric layer.

13. A breathable material according to claim 1, having a water vapor transmission rate of greater than about 150 g/m^2*24 hr.

14. A breathable material according to claim 13, having a water vapor transmission rate of less than about 2000 g/m^2*24 hr.

15. A breathable housewrap material, comprising a low-elongation fabric layer exhibiting less than about 30% elongation as measured according to ASTM D5034 in at least one direction, and a microporous coating comprising high density polyethylene and a filler thereon.

16. A breathable housewrap material according to claim 15, wherein the low-elongation fabric layer comprises a polyolefin nonwoven layer.

17. A breathable housewrap material according to claim 16, wherein the low-elongation polyolefin nonwoven layer comprises polyethylene cross-laminated open mesh having a basis weight of greater than about 0.7 oz/yd^2.

18. A breathable housewrap material according to claim 16, wherein the low-elongation polyolefin nonwoven layer comprises spunbonded polypropylene having a basis weight of greater than about 0.7 oz/yd^2.

26. A breathable material according to claim 1, wherein the low-elongation fabric layer comprises a low-elongation woven layer.

27. A breathable material according to claim 26, wherein the low-elongation woven layer is formed of polyethylene, polypropylene, or a combination thereof.

EVIDENCE APPENDIX

There are no submissions under 37 C.F.R. 1.130, 1.131 or 1.132.

RELATED PROCEEDINGS APPENDIX

There are no known related proceedings.

1416361_1